

Scoletoma zonata

Phylum: Annelida
Class: Polychaeta
Order: Phyllodocida
Family: Lumbrineridae

Taxonomy: Classifying lumbrinerids is notoriously difficult at the generic level (Blake and Ruff 2007). Most recently, *Scoletoma zonata* was a member of the genus *Lumbrineris*, one that many authors have attempted to divide due to incomplete descriptions and lack of type material. Frame (1992) designated genera based on setal morphology: species with composite hooks, simple hooks and simple limbate setae fall within *Lumbrineris* and those with simple hooks and simple limbate setae fall within *Scoletoma* (Frame 1992). Thus, *S. zonata* is the name currently used (Blake and Ruff 2007).

Description

Size: Individuals often large, exceeding 200 mm (Kozloff 1974) with average sizes 160–200 mm in length and 4.5 mm in width (Hartman 1968). The illustrated specimen (from South Slough) was 160 mm long.

Color: Light red orange to bronze and highly iridescent.

General Morphology: Long, cylindrical worms with a relatively featureless anterior (Lumbrineridae, Blake and Ruff 2007).

Body: Body smooth, elongated, cylindrical and earthworm-like (Ricketts and Calvin 1971) with no ventral groove (Fig. 1). Body segments total more than 200. First two body segments are achaetous and apodous.

Anterior: Prostomium simple, bluntly conical, with no appendages (Fig. 2) (*Scoletoma*, Hilbig 1993).

Trunk:

Posterior: Pygidium gradually tapers to a point, no appendages (Fig. 1).

Parapodia: Small and uniramous. Anterior postsetal lobes shorter than presetal lobes (Fig. 3). Posterior parapodia have postsetal lobes only slightly longer than presetal.

Setae (chaetae): Anterior parapodia with limbate setae and simple falcigers or hooks (Fig. 3). Posterior parapodia with simple falcigers, with multidentate tips, and yellow acicula (Fig. 4a, 4b).

Eyes/Eyespots: No eyes (Lumbrineridae, Blake and Ruff 2007).

Anterior Appendages: None.

Branchiae: None.

Burrow/Tube: An active burrower, *S. zonata* does not build permanent burrow.

Pharynx: The jaw (maxillary) morphology has become useful in lumbrinerid taxonomy, but the pharynx must be dissected to observe them. In *Scoletoma* species, the maxillary apparatus is composed of five pairs of maxillae: maxillae I and II are of equal length and I is without accessory teeth and with attachment lamellae, while II has wide attachment lamellae long the posterior edge. Maxillae III and IV also have a wide attachment lamellae and are pigmented. The final maxillae (V) are free and lateral to IV and III (Carrera-Parra 2006).

Genitalia:

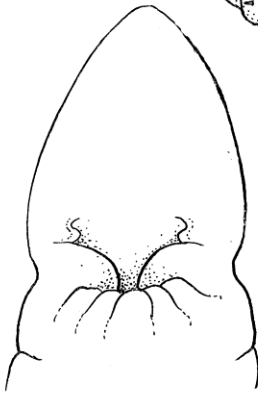
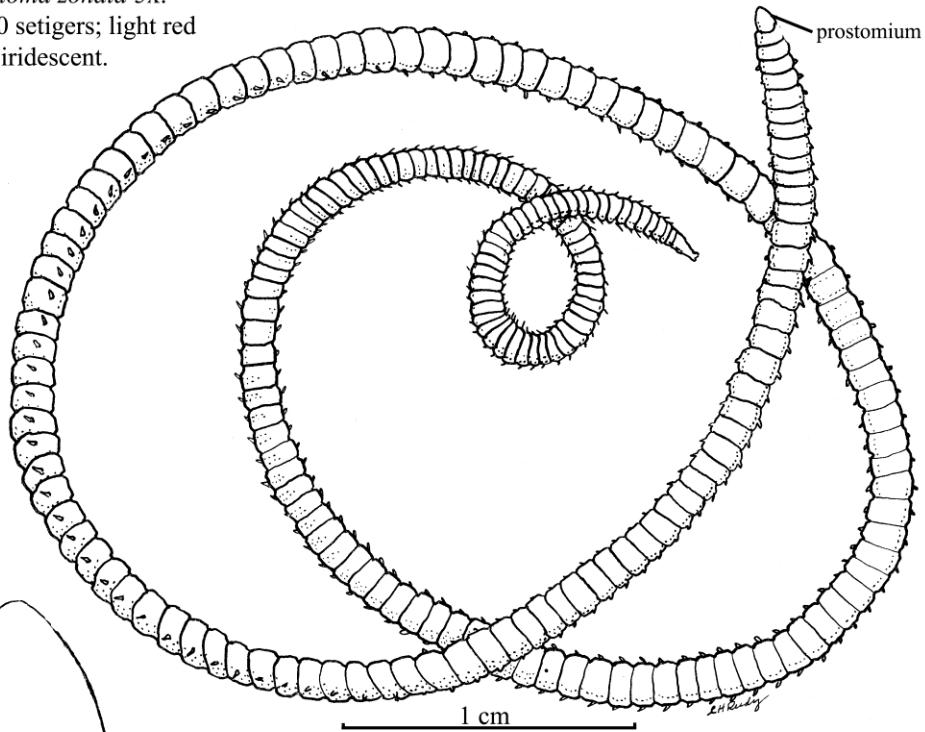
Nephridia:

Possible Misidentifications

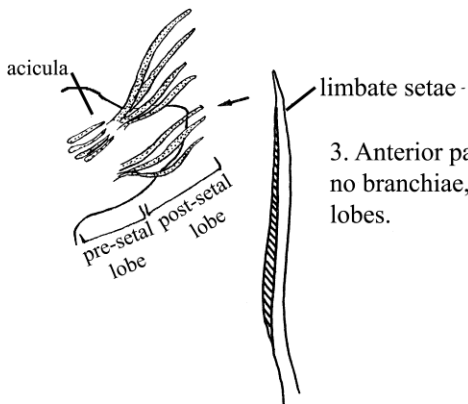
The family Lumbrineridae is composed of burrowing worms with relatively simple morphology, making taxonomy at the generic level difficult and resulting in many revisions over time. There are currently nine species from three genera reported from central California to Oregon (Blake and Ruff 2007). The three genera are *Eranno*, *Lumbrineris* and *Scoletoma*. Current taxonomy of these genera includes characters of maxillary (jaws) or setal morphology. Members of the genus *Eranno*, for example, have setae that include limbate capillaries and simple

Scoletoma zonata

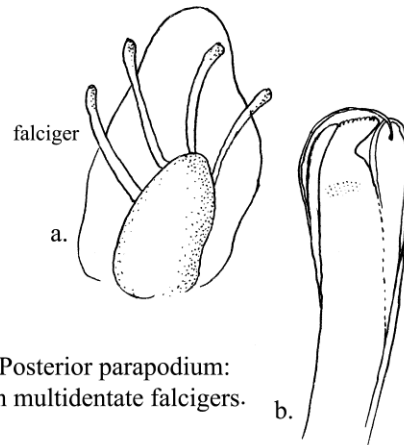
1. *Scoletoma zonata* 5x:
over 200 setigers; light red
orange, iridescent.



2. Prostomium (ventral view):
bluntly conical, eyeless; first two
segments no setae or parapodia.



3. Anterior parapodium:
no branchiae, short post-setal
lobes.



4a. Posterior parapodium:
with multidentate falcigers.

4b. Simple falciger, enlarged.
(Hartman 1968, p. 777)

hooks, but they can also be recognized by a support plate between maxillae I and II (Frame 1992; Hilbig 1993). *Lumbrineris* species have simple limbate capillaries and hooks as well as composite hooded hooks, where *Scoletoma* does not have composite hooded hooks.

Lumbrineris currently includes five local species. *L. californiensis*, *L. japonica* and *L. inflata* can be differentiated by the shape of their prostomium (Plate 160, Blake and Ruff 2007). *L. latreilli*, a cosmopolitan species, is pale red to brown has yellow acicula. *L. japonica*, a rare species, is reddish-brown and iridescent, and with black acicula. *L. cruzensis*, a subtidal species, is recognizable by a single tooth on each maxilla III and IV (Blake and Ruff 2007).

Three species of *Scoletoma* occur locally. *S. erecta* with long posterior postsetal lobes that stand erect and are iridescent bronze in color. *S. luti* (= *L. luti*) with yellow acicula, is very small (under 50 mm) and has very long posterior postsetal lobes (Hartman 1968; Blake and Ruff 2007).

Ecological Information

Range: Type locality is Salmon Bay, Puget Sound, Washington. Known range Alaska to western Mexico (Hartman 1968).

Local Distribution: Coos Bay estuaries and mudflats (e.g. Metcalf mudflat, South Slough) and outer coast, also common in Puget Sound (Kozloff 1974).

Habitat: Substrate includes mud and chips and eelgrass areas (Porch 1970). Intertidally in mud, under rocks and amongst mussel and barnacle beds. Along the outer coast individuals occur among holdfasts and in mudflats of protected areas (Ricketts and Calvin 1971). **Salinity:** Found in in salinity from 10 to 30 in Coos Bay.

Temperature: Collected at temperatures from 8–18°C in Coos Bay.

Tidal Level: High intermediate intertidal to 84 m depths.

Associates: Associates include other polychaetes (e.g. *Abarenicola*), amphipods and tanaidaceans.

Abundance: The most common lumbrinerid in northern California and in the intertidal northeast Pacific (Hartman 1944; Ricketts and Calvin 1971). Also common in Coos Bay (Porch 1970).

Life-History Information

Reproduction: Eggs approximately 500 µm in diameter. In California, development occurs in February (Hartman 1939 in Richards 1967).

Larva: Development is direct and adults brood larvae (Crumrine 2001) and 3-setiger stage larvae have been found along the walls of adult burrows in summer months (Washington, Fernald et al. 1987).

Juvenile:

Longevity:

Growth Rate:

Food: Ingests mud and eats detritus. No animal remains were observed in the guts of *Scoletoma* sp. (Banse and Hobson 1968).

Predators:

Behavior:

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